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The Role of Automotive Value Chains in the Development Patterns of Mississippi

By

Mitchell Palmertree

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of the  
requirements of the Sally McDonnell Barksdale Honors College

April 21, 2021

Approved by

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### **Abstract**

This thesis investigates the automotive industry within Mississippi through a Global Value Chain lens. Through interviews conducted with economic developers affiliated with Nissan and Toyota's recruitment, this thesis highlights the effect these final assembly plants on local economic development and the role these economic developers play in their recruitment. The automobile industry within Mississippi behaves much like the automobile industry elsewhere within the world as they tend to locate near final markets, drive the co-location of suppliers, and remain long-lived institutions in the community. This thesis also illuminates the role of state and local actors in recruiting the automotive industry. State and local actors actively increase the value of industrial sites through pre-development in order to make their site more "valuable" in the eyes of automobile firms, and these actors also play important roles in showcasing the unique advantages of their sites and facilitating cooperation.

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## **Chapter 1: Theories of Development and Automotive Value Chains**

### **Introduction**

Since the mid-20<sup>th</sup> Century, scholars (Rostow 1960) have observed that, as nations grow and develop, economic development is almost inherently unequal. Empirical works show that some areas thrive as other remain static or even decline (Rose 1984, Smith 1978, Tausch 2018, Escobar 2012). A substantive portion of the literature looks at examples of success, but development and underdevelopment are not two different phenomena divorced from each other but rather two sides of the same coin. The study of underdevelopment, the forces that create it, and how to rectify it hold an equal importance. This thesis aims to contribute to the field of study surrounding economic underdevelopment by looking at the example of the Mississippi Automobile Industry and how it acts as a catalyst for economic development.

Early works on economic development conceptualize it as a linear process that grows toward a final stage, an idea clearly represented by the most advanced industrial economies. This typical view of development derives itself from Rostow theory. According to the Rostow theory of development, underdevelopment and development share the same series of development, with underdevelopment filling the role of a natural state that evolves into the development stage (Dorfman 1991, Parr 2001, Rostow 1960).

However, theories such as Dependency theory, Postcolonial Development theory, and the work of Arturo Escobar see underdevelopment as a condition brought onto parts of the world by outside forces. Generally speaking, these theories claim that the concentration of wealth in the ‘developed’ parts of the world occurs, in part, due to the extraction of resources from elsewhere. Thus, development in certain cities, regions, or countries creates impoverishment elsewhere.

Among these scholars, Arturo Escobar introduces the idea that discourse among scholars, primarily in the first world, imposes a state of underdevelopment on the minds of leaders in the “underdeveloped” or “third world”. This imposed underdevelopment compels them to engage in a world system that the “first world” has immense control over in order to try to correct it (Bennet et. al 2017, McFarlane 2006, Radcliffe 2005, Noxolo 2016). Postcolonial development theory intertwines the realities of colonial settlement by colonial powers with the development outcomes of today. It traces these development outcomes to the institutions set in place by colonial powers during settlement (I.e. exploitation and extraction vs. settlement and replication of European institutions) (Bennet et. al 2017). Finally, dependency theory develops to the fullest the stance that development and underdevelopment are deeply intertwined and caused by one another. Dependency theory holds that underdevelopment occurring in the periphery of a society results from economic motivations within the centre of a society. The primary forms of economic development that take root in the periphery serve to feed economic systems of the centre, through processes such as resource extraction, surplus labor value extraction, or simple siphoning of laborers (Brewer 2002, Ghosh 2017, Parthasarathy 1994). As such, the underdeveloped periphery depends on the centre for the continued existence of their industries while also remaining in a perpetual cycle of underdevelopment.

Each of these theories vary in regards to how explicit the conditions of underdevelopment are tied to outside forces, but all of them agree that underdevelopment is not simply the absence of development. These theories reflect the larger trend of academic discourse which holds that underdeveloped areas play as active of a role as developed areas do in the global system ushered in by globalization. Most importantly, these theories highlight that the dynamic of development

and underdevelopment is not only a matter of world regions or countries; instead, the same dynamics exist within countries and even within regions. Within this same trend of academic discourse, Global Value Chain (GVC) theory emerged as a widely used theory that is able to explain development and underdevelopment at multiple levels throughout an increasingly globalized world. GVC theory combines supply chain analysis from the business world with elements of sociology. Through analyzing the flows of goods and services within a Global Value Chain, scholars determine the nature of interactions between firms/ regions and the Value chain. In particular, firms that capture the most value at their stage in the Value Chain (I.e. create the most profit for themselves by adding value to the product), exert the most influence over the organization of the Value Chain (Gereffi et. al 2005). These captured gains and resulting influence allow firms to dictate the location of smaller firms as well as drive additional nearby development (Gereffi et. al 2008).

Mississippi stands out as an incredible candidate for a study of this kind. Mississippi offers a unique insight to study local level development occurring within a largely underdeveloped region. Though largely underdeveloped for most of its history, certain industries recently chose to set up shop within Mississippi due to its unique conditions. Most notably, in 2003, Nissan Group of North America established a final assembly factory for Nissan vehicles in Canton, MS. Merely 8 years later, the Northeast Mississippi Toyota assembly plant also opened its doors. The establishment of these two assembly plants allows for an in-depth analysis of Mississippi's location within global value chains and its ramifications on economic development.

## Topic and Importance

This paper examines the automobile industry in Mississippi through a global value chain lens. In particular, this paper evaluates the impact that automobile value chains have on economic development within Mississippi and how government actors engage in automotive value chains. By understanding the role that these automotive value chains play in development and how government actors successfully persuaded them to invest in Mississippi, it is possible to outline how future government actors can attract similarly important industries in the future.

Gereffi et. al (2008) notes important trends within automobile production that have important implications for economic development. Among these, automobile final assembly plants tend to establish close to final markets. This occurs largely because of politics. These firms experience the effects of legislation like other manufacturers; however, the potential for political backlash if automobile companies produced in a foreign country plays a much more unique role. Firms expect this political backlash against foreign production because of the high cost and visibility of automobiles are visible reminders that the value of that product was transferred to another country. Additionally, automobile final assembly plants drive the location of close-to-end suppliers to more proximate regions. Within the GVC literature, lead firms plants can drive the co-location of suppliers due to the firms' power in the value chain. The final assembly plants acts as the lead firm in this value chain because it functions as the primary consumer for its close-to-end suppliers and can demand new products.

Pavlínek (2009) explores the automobile industry in Central Europe, an area which may yield relevant comparisons to the American South because both are low-wage areas integrated in large, highly affluent political units (respectively the US and the European Union). Pavlínek



(2009) outlines why Automobile Transnational Corporations (TNC's) have established production facilities throughout Central and Eastern Europe as well as what the implications of that investment are for economic development within those regions. Automobile TNC's moved manufacturing locations to Central Europe due to its combination of lower production costs and geographic proximity to affluent markets.

According to traditional views of core-periphery, less developed economies in the periphery should concentrate on their comparative advantages in cost-sensitive or labor-intensive products (Pavlínek 2009, Ghosh 2017); however, the success of underdeveloped countries attracting higher value-added segments of value chains undermines these traditional views (Faust et al. 2004, Layan and Lung 2004 ). Pavlínek (2009) shows that Eastern Europe incorporated higher value-added segments of the automobile supply chain, such as Research and Development and engine production, into their country for the purpose of exporting or even domestic production of vehicles. Part of the reason for this shift is that these regions adapted to the presence of TNC's and accommodated them. TNC's elected to continue investment in Central Europe over other possibilities because Central Europe had a population which could meet their demands for skilled workers while also having lower wages for skilled work, weak trade unions and flexible labor laws, and governmental incentives (Pavlínek 2009).

These findings from Gereffi et. al (2008) and Pavlínek (2009) suggest that the automobile industry is uniquely situated to move production to underdeveloped areas, especially when those areas are within close geographic proximity to affluent markets. Additionally, as Gereffi et. al (2008) shows, the existence of these automobile manufacturers causes numerous downstream effects such as the co-location of lower level suppliers. Finally, as both Gereffi et. al (2008) and

Pavlínek (2009) show, the automobile industry remains a static entity due to the immense investment required to establish factories as well as how susceptible they are to influence from policy actions, whether those policies are in place or threatened. In short, previous works suggest that the automobile industry can be brought to less developed areas, influenced to stay in those areas, and spark waves of economic development to follow.

This thesis seeks to establish whether the outcomes of automobile final assembly plants opening shop in Mississippi align with the predictions of Gereffi et. al (2008) and Pavlínek (2009). Additionally, this thesis seeks to elaborate on the role of state and local actors play in the process of recruiting these automobile firms.

### **How the Thesis Will Develop**

Following this introduction, the first chapter will explore the theories of economic development. This discussion traces the evolution of theories surrounding economic development in order to highlight how underdevelopment has been understood throughout time. This literature review will pay particular attention to Global Value Chain theory by exploring both the foundational literature of the topic and local level applications of the theory. Global Value Chain theory is especially equipped to explain the role of underdeveloped regions and how they can both interact in the global system and gain more power within it. Before transitioning to the second chapter, this paper will cover the methodology

The second chapter will begin to link this literature to the reality of economic development in Mississippi. This chapter will be more akin to a macro level analysis showing the trend of economic development in Mississippi on a state level. This analysis begins in the antebellum, agrarian society of Mississippi and highlights how the history of slavery and

sharecropping contributed to the underdevelopment of Mississippi. From there, it outlines the history of the Balance Agriculture with Industry program started by Mississippi in the 1930's and its role in industrializing the state. Finally, it analyzes the state's economic history through both dependency theory and Global Value chain theory.

The third chapter will be an empirical chapter that centers on the Nissan Automobile Final Assembly plant in Canton, MS and the Toyota Final Assembly Plant in Blue Springs, MS. These plants were highly sought after manufacturers which numerous levels of government involved themselves with in order to ensure their investment. This chapter will discuss how these firms affected the creation of numerous downstream suppliers. Additionally, this chapter will discuss interviews with local and state level policy makers in the attempt to outline the role that these actors played in influencing development.

The fourth and final chapter will serve as the conclusion. This chapter will place the important findings of the paper into a consistent narrative of how policy and industry behaved in Mississippi in the context of Global Value Chain theory. Additionally, my paper will offer suggestions for policy makers regarding economic development.

## **Literature Review**

Scholars generally accept that economic development functions to improve the material conditions of an area. The reason for the general acceptance of this notion is largely based on the foundations of modern thought regarding economics and economic development. Theories on economic development formed near the beginning of the 20th century. At this time, Western scholars tried to determine what enabled the modernization of societies and economies to take place. These attempts attempted to simultaneously portray what elements propelled developed

nations to enter into the modern, industrial era and what elements kept nations in a condition of underdeveloped “backwardness”.

Out of these initial theories, Rostow’s theory of development gained popularity. Rostow theorized economic development as occurring in 5 distinct stages - traditional society, preconditions for take-off, take-off, drive to maturity, and age of high mass consumption (Rostow 1960, Dorfman 1991, Parr 2001). This approach to development obviously originated from ideas about the western world. Because Rostow created his model in the 1950’s and 1960’s, his model closely followed the historical examples of the United States and Western European countries (Parr 2001). At the time, these countries epitomized “modern” economies in the eyes of many academics because they embraced corporations and industrialization. As such, Rostow’s model of linear development most clearly applied to older regions of the western world which had begun development in relatively closed economies (Parr 2001).

Rostow’s model did what it set out to do, but clear problems emerged. Foster-Carter (1976) represents these problems as largely arising out of an intellectual paradigm. Rostow’s model, as well as the underlying thoughts which guided his approach, largely dominated the conversation about economic development and underdevelopment. However, the world that Rostow theorized about changed rapidly. In an increasingly globalized world, regions could no longer begin their early stages of development in the relatively closed economies that aligned so well with his theories. In addition to this breakdown, empirical and theoretical challenges emerged against Rostow’s stance that underdeveloped countries remained underdeveloped and “backward” due to their institutions.

The school of dependency theory poses a prominent challenge to Rostow's theory of development. Scholars operating within dependency theory maintain the global economy cultivated a system where the "centre" (developed nations of the world) fueled its development by draining resources from the "periphery" (the underdeveloped nations of the world), leaving the periphery in a perpetual state of underdevelopment (Ghosh 2017). The extraction of resources creates industries intertwined with this extraction as well as a consequential lack of resources. Thus, the periphery lacks the means of developing on its own, and its current industries depend on the centre for their continued existence (Ghosh 2017).

Dependency theory accounts for development and underdevelopment in ways that Rostow's theory could not. Dependency theory explains that development and underdevelopment were tied together and fueled by one another rather than simple byproducts of a system. This connection results from an increasingly globalized world, one that Rostow's model was unable to account for and model correctly. Underdeveloped countries remained at risk for exploitation by the developed countries of the centre so long as they were connected to the global economy which explains how rapid development could occur in the economic center while perpetual status of underdevelopment (Parthasarathy 1994, Tausch 2018, Ghosh 2017).

This new take on economic development presented new opportunities for scholars, and new thoughts on economic development emerged that incorporated elements of dependency with other ideas. Among these, Postcolonial Development theory stands out. Postcolonial Development theory posits that the legacy that colonial powers leave upon their former colonies drastically affects development outcomes (Bennett et. al 2017, Radcliffe 2005, Noxolo 2016). Within these legacies, multiple factors can drastically affect development outcomes. For

example, scholars theorize that the system of law which former colonies have adopted play a significant role. This idea marks a substantial departure from the theories of linear development like Rostow and dependency theory because it develops the idea that policy does affect development outcomes. Additionally, whether the original purpose of the former colonies were meant to extract valuable commodities or be areas of settlement plays an important role in the development of former colonies (Bennett et. al 2017). These theories draw on the idea of created dependency that Dependency Theory is built on because it states that the political economic institutions that were established by the colonial power were intentionally subservient and have entrenched those legacies.

Once the general principles of postcolonial development took hold, scholars began to dive deeper into how these colonial legacies could manage to exist and perpetuate global inequality in our modern age. Arturo Escobar (2012) adds that through the lens of discourse among western academics and economic institutions, the global south began to perceive themselves as “third world” and “underdeveloped”. As such, the rulers of these countries turn to those scholars and economic institutions for assistance. By doing so, they willingly submit themselves to participating in a global economic system that sought to export labor intensive manufacturing jobs to them and siphon off resources and value from them. By pointing these methods and legacies out, postcolonial development scholars hoped to challenge the power structures of our global economic order that perpetuated economic inequality. In doing so, they hoped to create a shift that could push academics to begin to look at development with a regionally specific approach (Noxolo 2016).

Stepping away from academic theories surrounding economic development and global trade, it becomes clear that the power structures Postcolonial Development critiqued were rapidly changing. The shifting of manufacturing jobs from the economic centre to the periphery removed the sense of certainty surrounding the international division of labor that dependency theory and postcolonial theory had predicted (Pavlínek 2009). As such, a new theory arose that could better explain this rapidly changing world called Global Value Chain (GVC) theory. GVC theory brings together elements of transaction cost economics, production networks, and technological capability and firm-level learning into a singular theory to analyze the evolving structure of global trade (Gereffi et. al 2005).

GVC theory is especially applicable to studies of development in a globalized world because it is able to effectively integrate firm specific advantages with location specific advantages (Gereffi et. al 2001, Gereffi et. al 2005, Pavlínek 2009). While postcolonial and dependency theory focuses on macro-level dynamics at the level of nations of world regions, GVC theory lends itself to micro-level analyses – at the subnational and also local level. In particular, GVC theory can show dynamics of development/underdevelopment within rich countries – and allow for the possibilities of resource extractions from poorer to richer regions of the same country. In particular, the decision of leading firms of the chain to locate more or less profitable economic activities in certain places instead of others has far reaching effects. GVC recognizes the dynamic nature of development. Because valuable firms may establish pieces of their value chain in underdeveloped regions of the world, those new industries do not have to remain in a state of constant dependence on the economic center or whatever world power it has ties to. Depending on the type of industry, the types of power structures within supply chains

wield varying degrees of control. The degrees of control depend upon the complexity of their interactions, their ability to codify their transactions, and the capabilities of the supply base (Gereffi et. al 2005). In addition to its integration of location specific analysis with firm specific analysis, GVC theory also outlines how underdeveloped areas can facilitate firm upgrading. In some power structures, lead firms hold the vast majority of the value added stages within their element of the supply chain; however, other firms in less dominated value chains can capture more value in their segment of the supply chain (Gereffi et. al 2011).

In particular, GVC theory is especially well equipped to study the automotive industry due to its complex value chain structure. Petr Pavlínek (2009) looks at the automobile industry that had recently begun to spread into Central Europe. In his work, he found that Central European countries increased their share of value in the supply chain of automobiles. Firms shifted their production to Central Europe because these countries were proximate to other factories within Western Europe, there were few trades barriers, and there was a sizable population of cheaper labour that could produce these parts at a lower cost. However, the increase in Central Europe's share of value largely results from economic upgrading on the part of the firm. These firms expanded their operations from simple production to include more valuable tasks such as routine research and development functions.

## **Methodology**

In order to gather data needed for this study, I will conduct interviews with economic developers that worked to recruit automobile manufacturers within Mississippi. These interviews will be recorded and transcribed, and important data from the interviews will be elaborated on in the empirical chapter.



The automobile industry within Mississippi has two major actors which are the Toyota final assembly plant in Northeast Mississippi and the Nissan final assembly plant in Central Mississippi. Nissan opened its doors in 2003 and was largely recruited by state level actors. Toyota opened its doors in 2011, and local and state level actors played a role in its recruitment. The dynamic between these two firms poses a unique opportunity for researchers to study the role of state and local level actors in recruiting automobile manufacturers to invest in Mississippi as well as what downstream economic development effects occurred due to their investment.

As such I will interview economic developers from both projects, and these interviews will revolve around two research questions: **Question A)** What is the role of the automotive industry in the larger dynamic of economic development? and **Question B)** What are the role of state and local actors in actively recruiting automobile manufacturers?

**In asking Question A,** this study attempts to ascertain what trends are specific to the automobile industry and why they are important to economic development. Additionally, policy makers and economic developers had already reached a consensus on the importance of the automobile industry, so this study will also explore their specific motivations for targeting the automobile industry as a key driver of economic development. Finally, I will compare these answers to the reality that automotive producers and the communities they inhabit face to see if this holds up.

**In order to answer Question A,** I will ask economic developers what the economies of these regions looked like before and what suppliers established their operations alongside these automobile final assembly plants. Furthermore, I will ask economic developers to elaborate on why economic developers believed the automobile industry was so conducive to generating

further economic development. Through answering these question, I will gain insight into whether or not GVC literature surrounding the automobile industry holds up in Mississippi as well as valuable insight into the downstream effects of these firms.

**In asking Question B**, this study attempts to add a new contribution to the study of automotive value chains. Previous work on automotive value chains emphasizes the role of very generalized political pressures and incentives in influencing automotive firm's decisions. By asking this question though, I explore how multiple levels of government affiliated actors actively employed multiple strategies to recruit automobile manufacturers.

**In order to answer Question B**, I will ask economic developers what sorts of strategies they implemented and what specific tasks they performed in order to recruit these manufacturers. Through answering these questions, I will better understand what different levels of government are capable of doing in recruiting industry. Hopefully, by illuminating these actions and how successful they were, a better picture for how to recruit valuable industries and facilitate their expansion may emerge.

## **Chapter 2: The Economic History of Mississippi**

### **Introduction**

The purpose of this paper is investigate the economic development of Mississippi and how the automobile industry affects economic development through the lens Global Value Chain theory. Such a paper assumes that the economy of Mississippi and the South are actually separable from the broader United States Economy. Though this distinction may be less evident today, there certainly was a separate Southern economy for quite some time. This distinctive Southern economy is largely defined by its low-wage labor market and extractive industries (Wright 1986).

Throughout its history, the economy of Mississippi encompassed these elements. For much of the early 20th century, Mississippi's economy solely depended upon agriculture - namely cotton. This agricultural production was largely located in the Mississippi Delta region and relied heavily upon enslaved labor. This use of enslaved labor and the legacies of it actively prevented economic development. Following the American Civil War, a sharecropping system of agricultural production arose as a replacement to enslaved labor. This system shed some of the destructive tendencies of the previous era, but it further entrenched extractive industries and low-wage labor markets. Mississippi took active steps to industrialize in the early 20th century, but industrialization was slow to take hold. As more industry began to appear though, many of harmful legacies of the past hindered the ability of industrialization to bring better lives to all Mississippians.

This chapter seeks to outline the history of Mississippi's economic development from its origins to the modern day. The dominance of the cotton industry in the 19th and early 20th

centuries encapsulates the story of Mississippi's early economic history. Then, in 1936, Mississippi began efforts to industrialize the state through the Balance Agriculture With Industry program (BAWI). The BAWI program exemplifies the South's attempt to rapidly industrialize and usher in waves of economic development, and it serves as the perfect example of how Mississippi developed to its present form. Recently, Mississippi has added two automobile final assembly plants to its economy which have served as a nexus for economic growth. Despite these recent successes, Mississippi's story does stand out as an exception from the norm in many ways. As such, this chapter will also briefly discuss why Mississippi's development differed from general trends before finally connecting Mississippi to the broader literature.

### **Cotton - A Despot King**

#### **Antebellum**

The Mississippi Delta is among the most fertile farmlands in the United States. Beginning in the early 1800's, planters developed an agriculture based economy fueled by enslaved labor and the production of cotton. As time passed, the incredibly high prices of cotton fueled this industry to new heights. Planters expanded their plantations' production, purchasing more land and demanding more enslaved labor. The behavior of these planters was geared toward the ownership and control of enslaved labor, effectively acting as "labor-lords" as opposed to landowners (Wright 1986). The existence and prioritization of enslaved labor during the antebellum period enabled a stagnation and deterioration in the value of land, lost capital in the postbellum period, and a low-wage labor market; all of which contributed to the severe underdevelopment of Mississippi's modern economy.

The nature of Cotton production and the inputs involved in it meant that the wealthiest Mississippians, labor-lords, felt no incentive to invest in developing the land (Wright 1986). Wright (1986) explains that the primary reason for this is lack of incentive is that these labor-lords' wealth was largely tied to the value of their enslaved laborers. The value of enslaved laborers often compromised two-thirds of labor-lords' wealth, and the value of these laborers was independent of local lands (Wright 1986). Enslaved laborers could easily be moved to new areas and exchanged whereas land could not. As such, investments in the land, whether they be mineral exploration, infrastructure projects, or facilities, would not substantially increase the wealth of labor-lords nor provide them with nearly as much liquidity. This idea is explored by Wright (1986) through the example of the Piedmont gold rush. Labor-lords heard rumors of gold being found near them, but they expressed little interest and did not search for gold. Searching for gold with enslaved labor carried the opportunity cost of agricultural production. Additionally, the discovery of gold deposits would only increase the value of their land. This increase in value of the land did little to improve the wealth of the landowner/ labor-lord, and the selling of the land for gold mines would actively hinder the ability to continue agricultural production. The result is that in the South, wealth necessitated the accumulation of enslaved laborers, and land and communities were distinctly secondary (Wright 1986).

Additionally, the nature of enslaved labor investments tended to disperse populations and prevent infrastructure from being developed. Whereas populations were condensed to cities in free-states, populations in the South tended to be isolated to plantations, and small towns were the main developments (Wright 1986). Labor-lords were actively separate from these communities, and they had little stake in assuring their success (Wright 1986). Wright (1986)

illuminates this by showing that Mississippi had only 29 towns with a population over 200 in 1853 while Indiana had over 77 towns of that size in 1833. By 1847, Indiana had 156 towns with a population over 200 while still having a smaller population than Mississippi in 1853. This dispersal of populations, combined with the lack of incentive to invest in developments, fueled a cycle where more industries would continually face hurdles to develop.

There are additional economic reasons for why capital was so heavily consolidated into cotton production. Cotton sold for high prices, and there were low barriers to expanding production. Though manufacturing fetched higher returns than most agricultural investments, cotton could be produced with a mix of land, enslaved labor, and a cotton gin. Afterwards, cotton could be shipped to market through readily available natural waterways (Fogel 1979). On the other hand, other industries needed greater investments or even infrastructure which was nonexistent. This meant that investing capital elsewhere carried a high opportunity cost (lost profits from cotton production).

Another confounding factor which hindered the South's (and Mississippi's) ability to develop is that all of the capital invested into the use of enslaved labor was unable to be reabsorbed into other sectors of the economy (Wright 1986). Mississippi's economy not only relied upon the use of enslaved labor, enslaved people themselves were often used as collateral in credit transactions. The value of enslaved laborers were often used to back securities in banks throughout the United States (Beckert 2014). Labor-lords in Mississippi relied upon these securities to finance expansion. The abolition of slavery not only erased all of the capital that had been invested into enslaved labor, it also directly cut off a critical pipeline of credit which could have financed the development of other industries.

## Postbellum

These preconditions from the antebellum era explain some of the reasons that Mississippi struggled to develop in the 20th century, but the existence of a low-wage labor market within a high wage country plays the most prominent role. Following the abolition of slavery, sharecropping became the dominant form of agricultural production of cotton. This sharecropping system promoted an almost exclusively race based hierarchy where Black laborers were often entrapped with debt by White landlords. The use of this system reversed some of the hinderances to development from the antebellum era, but it also entrenched low-wages and a continual deprival of resources to maintain it.

As slavery was abolished, former labor-lords transitioned into landlords ruling over sharecroppers. As such, these plantation owners began to invest in new industries for the first time (Wright 1986). These investments primarily fell into two categories - industries which generated more value out of cotton production and extractive industries. Industries such as fertilizer plants, cotton gins, and cotton-goods manufacturing enabled greater profit margins for plantation owners, either by boosting output or by increasing value of products before exporting. As for the extractive industries, the lumber industry dominated in Mississippi while other regions developed coal and iron industries. These industries increased the value of the land, a stark contrast from the antebellum era, but these industries often did little to add value to the natural resource being extracted (Prince 1961).

Though the new industries were an improvement from the antebellum era, the active decision to maintain a low-wage labor supply hindered future economic development. Because sharecropping replaced enslaved laborers, sharecropping landlords demanded a labor force with

enough low-wage workers. In order to maintain an adequate supply of low-wage labor that could continually be utilized, the Mississippi Delta was kept underdeveloped and attempts to improve education were halted (Wright 1986). Political leaders feared that improved educational opportunities would negatively impact the low-wage labor supply in Mississippi. Leaders primarily feared that highly educated residents would migrate out of the state, but they also feared that educational opportunities would enable a more skilled workforce that could not be utilized for agricultural production (Wright 1986). This failure to educate maintained the low-wage labor supply necessary for sharecropping, but it also contributed to the lack of technological innovation occurring within the South (Wright 1986).

Mississippi's entanglement with agriculture and cotton production played a profound role in shaping the economic development of the state. Cotton production's demand for enslaved labor dealt a tremendous toll on the ability of the state to develop in the antebellum period, and the legacies of that regrettable institution delayed development in the postbellum period. Shifting beyond the legacies of Slavery to the formation of the modern economy, it is evident that Mississippi's insistence on preserving the cotton industry enshrined a system that protected low-wage labor and neutered the ability to develop the state's economy.

### **Balance Agriculture With Industry and Industrialization in Mississippi**

At the dawn of the 20th century, Mississippi remained a heavily agrarian society in a rapidly industrializing nation. The few industries that did exist in the state added little value to the raw resources that were being harvested there (Prince 1961). Additionally, the dominance of cotton meant that the well being of the state's economy fluctuated with cotton prices (Prince



1961). As such, Mississippi saw decades of emigration, losing roughly 400,000 people in the 1930's and similar rates in the 1940's and 1950's (Prince 1961).

Recognizing this precarious position, Mississippi enacted Balance Agriculture with Industry Program (BAWI) in 1936. This program enabled municipalities and counties to purchase land, build facilities, and rent out facilities in order to foster the economic growth and attract manufacturers (Freedman 2017). These facilities were built with public funds as a direct public subsidy and rented or sold to individuals or corporations that promised to locate industrial plants within those facilities. Additionally, corporations who participate in BAWI receive a five-year tax exemption from the state, and the cost of rent becomes a deductible for federal and state corporation income taxes (Prince 1961). Because of its method and level of comprehensiveness, BAWI stands out as a truly unique state industrial development.

As part of this program, Mississippi established the Industrial Commission and the Advertising Commission (Prince 1961). The advertising commission served as a promotion agency for the state and the BAWI program. This commission advertised the benefits of locating industry in Mississippi and the existence of the BAWI program as an added incentive on the national level, even directly targeting particular industrialists (Prince 1961). By 1939, approximately 370 serious industrial inquiries about the BAWI program were handed over to the Industrial Commission from the Advertising Commission. During this time, only 10 firms, employing 4,000 workers, had been established in Mississippi under the BAWI program (Prince 1961).

Though this result raises doubts about the effectiveness of the program and/or the work of the advertising commission, both of these programs did perform valuable functions. Part of the

reason so few firms were seriously considered and actually implemented is that the commission may have been too careful in its screening of prospective firms; however, this screening at the state level served an important function as it offered protections to local governments (Hopkins 1944).

The BAWI program was allowed to lapse under Governor Johnson in 1940, but it was reinstated in 1944 under Governor Bailey. This reinstated program was largely the same except the advertising and industrial commission were now united under the Advertising and Industrial Board (A&I board) (Prince 1961). The new A&I board was able to cover more ground under Governor Bailey and began personally soliciting industrialists and forming an ad campaign designed to attract tourism.

On the whole, the program did serve to help the state “balance” agriculture with industry, but BAWI likely did little to attract large industrial investments. By 1954, the value added by manufactures in Mississippi reached \$389 million, just \$11 million short of the value of all farm crops produced in the state that year (and a \$317 million improvement over 1939 numbers). The vast majority of these manufacturers fell into two, sometimes overlapping categories. Firms were either “footloose” industries, meaning they have no definitive location requirements (I.e. garments, textiles, and shoe industries) or they were more domestic driven firms (I.e. firms founded by someone in the region to interact with a region’s industry). Though these industries locate primarily based on low-wage scales, the offering of the BAWI subsidies helped drive these firms to locate in Mississippi as opposed to other southern states with low wages (Prince 1961).

In 1965, industrial employment was greater than agricultural employment for the first time in Mississippi’s history (Burrus and Sansing, n.d.). The largest industries responsible for

this shift were the saw mills, wood products, furniture, and textiles. The textile industry alone accounted for 22% of the state's total employment in 1965 (Lester 2017). However, it must be noted that this industrialization came at a cost. Due to its unique structure, municipalities and counties were often left with the bill from BAWI facilities if firms did not stay approximately 20 years and pay off the mortgage through their rent. The fact that the majority of these firms were "footloose" industries meant that communities could experience disaster if these industries decided to move elsewhere.

That disaster came as these industries began to be outsourced in the 80's and 90's. Following new regulations which expanded free trade, footloose industries such as the textile and furniture industry were able to relocate from Mississippi to countries with lower labor costs. The absence of these industries left many communities in dire straits.

The state of Mississippi had several responses to these departures. For one, Mississippi passed the Mississippi Gaming Control Act in 1990 in order to allow Casinos to operate along the Mississippi River. Legislators hoped that these casinos would serve as a revenue advantage for the state and these regions along the river (Brumback 2021). More importantly though, Mississippi began to emphasize industrial clusters in their economic development strategies (Miller 2017). Economic developers hoped that these industrial clusters would be incorporate mixes of region industries with suppliers, consumers, technology, and large firms in order to provide higher wages and more stability to a region.

### **Automobiles and Today**

Today, Mississippi's economy is largely manufacturing and service based, with only a small share of the state's gross product being agricultural products (Burrus and Sansing, n.d.).

Among the largest and most stable manufacturing jobs in Mississippi are the jobs related to automobile final assembly plants. The presence of automobile manufacturers has had a profound effect on the economic development of the state, and the story of bringing automobile manufacturers to Mississippi highlights important lessons that were learned from the BAWI program.

The automobile industry first came to Mississippi in a substantial way in the early 2000's as final assembly plants began to be built. As manufacturing as a whole began to decline in Mississippi at the end of the 20th century, Mississippi began to target new industries to fill the void left behind by these exiting firms. The automobile industry was one of the few industries that wasn't being outsourced, and it was one of the even fewer that was growing (Miller 2017). As such, State and Municipal level officials made it priority to target this industry, and the emphasis on creating industrial clusters justified the use of publicly funded incentive packages and strategies.

Mississippi targeted the automobile industry aggressively starting in the early 2000's. The state's approach built off of BAWI's example, but it also tried new approaches. States and municipalities optioned land for the purposes of creating industrial sites large enough to house automobile plants. Often, state level officials such as the governor themselves contacted CEO's directly and formed personal relationships. The state also did advertising campaigns meant to bolster the image of the state in the eyes of automobile CEO's. All of these methods aligned with had been done under BAWI, but they were greatly expanded in the pursuit of automobile assembly plants.

In addition to expanding upon what had already been tried, the state also provided new assistance that was directly important to the automobile industry. Since automobile assembly plants are quite large and require extensive materials, they required numerous permits in order to be built. Mississippi actively expedited the process of obtaining these permits for these firms. Automobile firms also typically require access to rail in order to ship final products to end markets throughout the country. As such, Mississippi actively negotiated with railroad companies on behalf of the firm to ensure passage could be obtained. Once firms began to locate within Mississippi, local manufacturers became suppliers. Additionally, new firms emerged to meet the needs of these final assembly plants. Economic developers at the state and municipal level facilitated the creation of these suppliers in order to ensure the automobile manufacturer could operate at max capacity.

### **Distinctions from the Norm of Development**

Mississippi's economy did transform and become more inline with the national average throughout this history, but there are still important factors that distinguish Mississippi from the rest of the United States. First, for a long time, the presence of these industries was largely predicated upon either the extraction of natural resources, the proximity to natural resources, or the use of cheap labor. Second, and perhaps most concerning, the economic development that occurred within the state did little to change to social make-up of the state. On the whole, the race based hierarchy that the South had created and perpetuated for generations had remained intact.

These conditions raise the question of how Mississippi's development took this shape. After all, many economist believe that spot-markets for labor should completely erase

distinctions of race. Wright (1986) repeats this sentiment, and he even goes so far as to confirm that this was the case. In addition to this, empirical evidence from other nations suggest that Mississippi's history of sharecropping work should have meant that Mississippians would thrive under entrepreneurial work from outsourcing (Piore and Sabel 1984). However, these did not occur. In places where there were more sustained relationships about labor, discrimination was still the norm (Wright 1986). Mississippians also did not develop a flourishing entrepreneurial or free-lance sector like other nations with similar preconditions.

An explanation for this peculiar departure from the norm is given in James Cobb's *The Selling of the South* (1982). James Cobb (1982) theorizes that this development occurred in such a way due to the pre-existing power structures of Mississippi. Ardent supporters of industrialization in the early stages of Mississippi's industrial development pushed industries which added little value to the agricultural and lumber related products that were harvested nearby instead of advocating for high-wage, technological development (Lester 2017). The consensus formed around these industries because they preserved the hierarchical, racial society of the South. These industries not only fell in line with the South's tradition of low-wage, non-unionized labor, they managed to further enrich white landowners and capitalists without shaking the rigid hierarchy through higher wages to workers (Cobb 1982). As such, Black Southerners were either excluded entirely from employment or employed into industries with low wages and no room for advancement. These industries and their hierarchal nature also didn't allow for entrepreneurial and free-lance work which could have thrived.

Cobb (1982) illuminates an important reality of Mississippi's economy. From a macro perspective, it seems as though Mississippi's underdeveloped nature results from its legacy as a

largely agrarian based economy. However, plenty of former agrarian based economies have advanced beyond that state and brought in higher-wage jobs. Cobb (1982) shows that Mississippi's development was hindered by its deeply segregated society and its unwillingness to break from its traditional economic and racial hierarchies. As a result, though Mississippi's economy did improve during this period, it did so within these confines and lagged behind the rest of the region and the nation (Burrus and Sansing, n.d.). This legacy remains with Mississippi as it is still one of the most economically disadvantaged states with one of the lowest per capita gross products (Burrus and Sansing, n.d.).

### **Mississippi Economic History through the lens of Dependency Theory and GVC theory**

This brief summary of Mississippi's economic history highlights a few important elements of the previously discussed theories of development. The two most evident theories of development are Dependency Theory and Global Value Chain theory. Through the lens of these theories, we can gather important insights about why Mississippi's development was delayed and why industrialization took the shape that it did.

By looking at this brief history through Dependency theory, we can see that Mississippi was actively kept in a state of dependence by those with capital throughout many eras. In the antebellum era, labor-lords actively kept Mississippi underdeveloped by investing in the accumulation of enslaved persons. This investment prevented the development of infrastructure and other industries while fueling an extractive industry. Following the civil war, labor-lords transitioned to land lords, and entrenched extractive industries. The industries which did develop served to only further enrich the land lords and add a small value to the raw materials which were extracted. This held true even as Mississippi began to industrialize more heavily.

This picture aligns with the nature of dependence described by Dependency Theory. Those who could shape economic development in Mississippi (the periphery) faced active incentives to maintain industries which extracted raw materials and surplus labor value from the region from economic forces in the centre. Planters stood to benefit the most by producing cotton with very low-wage agricultural labor. This active incentive served to keep low wages throughout the region, entrench extractive industries, and deprive the region of infrastructure. All of these conditions perpetuated underdevelopment in Mississippi.

Dependency theory provides a compelling narrative of the Mississippi economy in its early stages, but it loses relevance as we approach the modern day. It is difficult to account for the rise of the automotive industry within Mississippi and other Southern states through the lens of Dependency theory. The automobile industry is technologically advanced, provides high-paying jobs, and upgrades its economic functions frequently (Pavlínek 2009). Because of the automobile's ability to take on more high value and technologically advanced operations, the presence of this industry should break down the strict distinctions of centre and periphery that Dependency theory revolves around. One explanation may be that Mississippi and other Southern States have successfully assimilated with the economic centre or transitioned to the semi-periphery, but this comes at odds to Dependency theory though because transition is supposed to be steeped in conflict. This does not seem to be the case though as it appears that the economic centre welcomes these activities.

By looking at this brief history through Global Value Chain theory, we can see that Mississippi's underdevelopment was partly due to its inability to engage in economic upgrading in their value chains. In both the antebellum and postbellum eras, the cotton industry was



extremely important to global trade, and the cotton produced in Mississippi was used in textile mills in the US Northeast and the United Kingdom. Planters did little to increase the value of their product in the antebellum era; they simply harvested and ginned cotton before selling it. All of the actual upgrading of the product (turning the cotton into cloth or finished products) occurred elsewhere. In the postbellum period, Mississippi improved how much they engaged in value added manufacturing and expanded to new industries. Though not entirely responsible, some of this shift was facilitated by state level incentives to increase the presence of industry within the state. This increase of economic upgrading by manufacturers had a profoundly positive effect on economic development within the state.

Global Value Chain theory is much better suited to account for the rise of the automobile industry and explain its impacts than Dependency theory is. Rather than viewing Mississippi as a low-wage region which provided surplus labor value to the economic centre, Global Value Chain theory is able to recognize the nuances of Mississippi's situation. Mississippi's lower wages and lack of unions is particularly suitable to firms with labor intensive products that need to be close to end markets. Additionally, by the end of the 20th century, Mississippi experienced enough development to be able to provide enough suppliers to automobile plants if they choose to locate. Overtime, these automobile plants that did locate and the firms that supplied them took on additional tasks. These additional tasks lower the costs of the production while also adding more value at the state level.

The next chapter will discuss the examples of the Nissan Automobile Final Assembly plant in Canton, MS and the Toyota Automobile Final Assembly Plant in Blue Springs, MS. Through conversations with economic developers who worked on these projects, I elaborate on

many of the key observations of the automobile industry that GVC literature highlights. Most importantly, Mississippi's example shows the interworkings of the automotive's industry ability to influence downstream economic development by driving the location of important suppliers. In addition to confirming this finding, the next chapter also highlights the role of state subsidies and government officials in attracting lead firms and suppliers.

## **Chapter 3: The Automobile Industry in Mississippi**

### **Introduction**

As previously mentioned, the automobile industry marks a significant shift in Mississippi's economic history. Mississippi shifted its strategies for development to focus on industrial clusters in the 1990's, and automobile firms have been vital in establishing successful automobile clusters. This chapter outlines how Mississippi's economic development was impacted by these firms and how the state played a role in their recruitment through interviews with economic developers. This chapter will also analyze how the findings from these interviews align with previous GVC literature about the automobile industry. Additionally, this chapter highlights new contributions about the role of state officials and incentive packages in attracting lead firms and suppliers.

As GVC literature points out, automobile firms are sensitive to labor costs, prone to remaining in areas for long periods due to massive capital investments, and capable of driving the colocation of suppliers (Gereffi et. Al 2008, Pavlínek 2009 ). Policy makers and economic developers were well aware of these facts, and when foreign automobile firms like Nissan, Hyundai, Toyota, Mazda, and etc. began looking to open factories in the United States, many southern states heavily pursued these firms. For Mississippi, these firms were the perfect fit for their industrial cluster strategy.

Mississippi was fortunate enough to secure two final assembly plants in the 2000's - Nissan in Canton, MS and Toyota in Blue Springs, MS. Though one may assume that these firms were recruited in a similar manner, the respective stories of each recruitment differ widely. Both recruitment projects had the full support of the State behind them, but the Toyota recruitment for

Blue Springs also has significant local element as well. The differences in size of these firms also illuminates how these firms are able to drive long term economic development.

### **Nissan in Canton - Improving Sites and Providing Incentives**

Beginning in 2000, Mississippi's Governor Ronnie Musgrove led efforts to recruit an automobile manufacturer to the state. Nissan North America had announced that they would be opening a plant in the United States, and many Southern states stood out as good candidates. Nissan looked to these states because of the nature of their business. The final assembly of automobiles requires large amounts of labor, and the final product must be shipped by rail to end markets no matter where it is produced from. As such, Southern states, with their lower wage and largely non-unionized economies, were the ideal candidates for automobile manufacturers like Nissan.

In Mississippi, the State Government helped identify a few "super-sites" which could meet Nissan's needs. These "super-sites" were typically 1000-1200 contiguous acres with rail and interstate access. After some consideration, Nissan and their site selection consultants narrowed their sights on the Canton site because of its proximity to the largest population centers in the state. State level economic developers then set out to make the Canton site as valuable of a site as it could be. Through an interview conducted with William Scaggs, an economic developer who worked on the Canton project, this study highlights that these attempts to increase the value of the Canton site took three distinct shapes - negotiating the use of rails, expediting permits required for construction, and mitigating financial risks in the future.

Because automobiles are quite large final products, shipping them to end markets can only feasibly occur through rail or through trucking. Considering the sheer output of final

assembly plants and the necessity to ship cars throughout the entire United States, rails are the only viable option for shipment. The Canton site had access to rail, but it was served by a North-South line owned by Canadian National (CN). This North-South line was the only line that Canadian National operates in the United States, so Nissan would not have access to the majority of US markets without going through other rail companies. Recognizing the site would be worthless without the ability to ship the final product to end markets, the Mississippi Development Authority began to work a deal between Canadian National and Kansas City Southern (KCS), another rail company that operated an East-West line in nearby Jackson, MS.

So, my job was to deliver the message from [Mississippi Development Authority] and the Governor to Mike Haggerty (CEO of KCS) saying “Hey, we want to work a deal to get KCS to the table with CN to create some trackage rights for that section of rail between Canton and Jackson. [We would relay that message] via Gil Carmichael (a former Federal Railway Administration official) because Gil Carmichael had a personal relationship with Mike Haggerty ... In the end, a deal was struck ... CN maintained their trackage rights, but they allowed KCS some limited access to the Canton area. - William Scaggs

These negotiations were conducted between two private railroad companies, but they were initiated and facilitated by the State of Mississippi. Eventually, a deal was reached, and Nissan had Mississippi’s assurance that vehicles produced in Canton could reach their end markets throughout the country.

The sheer size of Nissan's investment also meant that any and all ways to decrease opportunity costs were amazing selling points. By being able to start and finish construction sooner, Nissan could begin to recoup their investment and become profitable sooner. Mississippi facilitated this by expediting the permitting process required for a project like this.

There's a number of permits that, in terms of how long it takes to be permitted, may range anywhere from six weeks to six months... All of them were done, I think, in three or four months, and Nissan was extremely pleased with the way the state handled their permitting process. Then, that became a selling point for Mississippi. [Mississippi] could use the Nissan Permitting process as a case study to showcase to other companies ... that [says] "Hey, Mississippi can help you get to market faster." - William Scaggs

In addition to the normal permitting process, the Canton site also presented additional challenges because there were ponds that posed major environmental concerns. Mississippi's Department of Environmental Quality was able to help expedite environmental permits for the CantonsSite, including the extreme environmental challenge of the ponds. These efforts meant that Nissan viewed Canton's facility much more favorably as they could avoid some of the more costly aspects of environmental permits and begin production sooner.

Finally, Mississippi provided both a generous incentive package and insurance for large risks. In 2000, the state enacted \$295 million in incentives for Nissan. The most prominent line items in this stimulus package are \$80 million to offset training costs, \$68 million for site preparation, \$59 million for road improvements, \$33 million for water and sewer infrastructure,

and \$17 million for construction of a vehicle preparation building (Lyne 2002). Then, in 2002, Nissan negotiated with the state to expand their factory, so the state of Mississippi passed additional incentives totaling \$68 million, all before Nissan even finished construction (lyne 2002). These new incentives were for additional training, infrastructure, site preparation, and the vehicle preparation structure. Outside of direct payments from the state, Mississippi also allowed generous tax breaks and provided insurance on the building due to the soil. These tax incentives removed property taxes on the building, removed sales taxes on construction, and provided tax credits for each worker for 20 years. The insurance provided by the state was that site preparation would prevent any structural concerns on the factory for 10 years. If there were structural concerns that arose due to soil shifts, the state would pay for repairs to the facility. These efforts actively lowered costs for Nissan, mitigated potential costs in the future, and enabled more profitable production from the beginning.

In 2003, Nissan opened its doors, and by 2004, the plant was directly employing 4,261 workers and contracting out 1,466 temporary workers from multiple temp agencies. Initially, the plant produced the Nissan Altima, but overtime, more models were added. Then, in 2010, Nissan completed the addition of a \$118 million commercial vehicle line. Today, Nissan is capable of producing 450,000 vehicles annually, ranging from sedans, SUV's, trucks, and cargo vans.

Nissan's production in Mississippi necessitated the construction of multiple suppliers in the immediate vicinity. Before Nissan even finished construction of their plant, 9 major suppliers announced that they would be building new factories to supply the Nissan final assembly plant. Three of these firms located their new plants adjacent to the Nissan plant, and four other firms placed their new plants within a 2 mile radius of the Canton plant. In 2013, Nissan North

America helped create another 1 million square foot campus for more suppliers to locate near the assembly plant (Bowman 2013). The clustering of these suppliers was because Nissan was utilizing modular production. Modular production outsources the production of automobile parts to suppliers. This enables the final assembly plant to save on inventory costs and focus on production and design. These suppliers must locate close to the final assembly plant due to the nature of the modular production.

The way automotive manufacturing works is it's "Just In Time" production. That means that Nissan doesn't want to warehouse a bunch of parts that they're going to use for their assembly line. They want the trucks rolling in and [parts] going from the truck to the line to be put on the car ... And then, it got to the point where Nissan wanted it to be not only "Just In Time", they wanted it to be sequenced. They wanted the truck loaded in the sequence that they were going to be using the parts. That's how managed the system was ... [ in order to do Just in Time and sequenced, they] need to be pretty close, and that drove the need for most tier one suppliers to be within a 45 minute radius. - William Scaggs, economic developer

This was well known by policy makers in Mississippi, and automobile final assembly plants actively created the industrial clusters that economic developers were seeking.



The effects that this modular, “just in time” production has on suppliers also explain why Mississippi was so eager to facilitate expansions in the production capacity of the plant. The more vehicles that Nissan produced means that more suppliers are likely to locate near Nissan.

At some point, the [Original Equipment Manufacturer] has to get to a threshold of so many units before its feasible for a supplier to locate ... If they can increase the number of units, then that creates an environment for suppliers to say, “hey, there’s enough business down here for us to make the local investment and reap more reward than remaining where we are and having to pay for all these transportation costs.” - William Scaggs

Mississippi’s policy makers anticipated that Nissan’s presence would fuel downstream economic development. Nissan’s expansion over the years hints that this is true. Following Nissan’s decision to produce commercial vehicles in 2010, Nissan quickly opened a supplier park to allow more suppliers to locate closer to the plant just three years later.

State officials initially estimated that as many as 16,212 spin-off jobs could be created by 2005 (Cardamone 2017). Between 2002 and 2005, total employment increased by 12,432 jobs in Madison County alone (where Canton is located). The nearly 4000 jobs shortfall could be due to other plants locating outside of Madison county, a possibility which is exceedingly likely for tier 2 and 3 suppliers.

These jobs were also significantly higher paying than other manufacturing jobs which had existed beforehand. According to a thesis study by Cayla Cardamone (2017), the average

annual salary in 2001 of all workers in Madison County and manufacturing workers in Madison county were practically identical at \$26,802 and \$26,188, respectively. When the plant opened in 2003, the average annual salary for all workers in Madison county rose by \$2,423 to \$29,225 a year, and the average annual salary for manufacturing workers rose by \$8,334 to \$34,522 a year. As we approach today, the impact of the Nissan Plant on wages is even more pronounced. In 2015, the average annual salary in Madison county was \$42,398, and the average annual salary for manufacturing workers in Madison county was \$56,587.

According to the same study by Cardamone (2017), these wage increases from 2003 to 2015 were 13.99% higher than nearby Rankin County's increases for all workers during the same time, and 24.92% higher than nearby Rankin County's manufacturing wage increases during the same time. It must be noted that this data is on the aggregate county level. This means that average salaries account for employees hired by Nissan, employees hired by suppliers, and temporary workers, but it only accounts for workers who live in Madison County.

### **Toyota in Blue Springs - The Role of Local and State Governments**

This section highlights the work done on the local level to attract automobile manufacturers to Blue Springs, MS. This work was done by local economic developers long before the State of Mississippi began to assist in the project. Many of the actions performed by these local economic developers mirror actions done at the state level in Nissan's case, especially when it comes to increasing the value of the site. This section also illuminates the role of state and local officials in actively forming personal relationships with high ranking business officials within an automobile firm and how those shape firm's decisions.

The story of Toyota's Final assembly plant in Blue Springs, MS is much different than the story of Nissan's plant in Canton, MS. In the Canton example, the story starts with the state actively pursuing Nissan's investment. Then, Nissan narrowed their eyes on the Canton site through external consultants they hired. In the Blue Springs case, local economic developers began to develop a strategy to attract an automobile manufacturer at the local level years before a project was announced. Much like the Nissan-Canton example, these strategies attempted to improve the value of the site and target sectors important to the automobile industry. Once Toyota began to search for sites to build their factories, the economic developers in charge of the Blue Springs site cooperated with the state of Mississippi to advertise their site, and Toyota narrowed their sights on the Blue Springs site through their own internal site selection consultants. Once this occurred, the state of Mississippi and local governments worked in unison to actively recruit Toyota through Toyota's internal upper level management.

Before 2000, economic development foundations based in Lee County actively began to prepare their community to recruit an automobile manufacturer.

In 2000, Tupelo was losing manufacturing plants because we were heavily into furniture. Over 50% of our population worked in furniture and ... we were outsourcing everything in China for production. [As a result,] just about monthly we would have a plant closing announcement, so our public officials quickly said, "well, what are we going to do about this?" The normal process of economic development of what I would call "hitting singles to score runs" had to go out the window. You had to take a big swipe, so our staff started doing some research on what were the industries that grew from 1990 to 2000.

[There was] only 2 industries manufacturing wise ... food and food processing and automotive. [Our] choice was dictated to [us] based on economics. We didn't have a lot of water. We have to pipe our water in from the Tim Tom [river], so food and food processing wasn't an opportunity [we could only pursue Automotive]. - David Rumbarger

Much like policy makers in the Nissan-Canton case, these economic developers knew that automobile manufacturers were beginning to establish final assembly plants inside of the United States, particularly the Southern United States. They were also innately aware of the automobile's ability to drive the co-location of suppliers. Because of the manufacturing downturn the region was experiencing, these conditions drove these economic developers to begin pursuing an automobile manufacturer without the assistance of the state.

These local level economic developers understood the challenges that their region posed, so they quickly began to identify a site so they could improve the value of it as quickly as possible. With help from the Tennessee Valley Authority (TVA), they identified a site in that was in the adjacent Union County. Economic developers in Lee County quickly earned the cooperation of officials in Union County to develop the site. With a site identified and an alliance formed, the first hurdle that they faced was that the region, and particularly the site in Blue Springs, did not have interstate access.

Our first job as a whole alliance was to go to Washington and get our good friend Senator Roger Wicker, and Senator Lott at the time, to designate Highway 78 [as an interstate].

[Wicker] got legislation in the house [which passed to] the Senate and [designated] a corridor X as Interstate 22 ... That was in 2002, and we were off after that. - David Rumbarger

Local level economic developers indicated that they pushed for this to happen simply because an automobile final assembly plant had never been located on a non-interstate before. However, the explanation for why this was such a vital step goes much deeper. Interstate access is vital to these automobile firms for multiple reasons.

[Automobile manufacturers] are trying to cut down on trucking costs, so they get as close to the Interstate as possible. Some companies like the visibility as well. They want to be there. They want their corporate name out there. They want to be seen. - William Scaggs

Because these final assembly plants utilized Just-In-Time, modular production, they require daily shipments from their suppliers by trucks. Interstates facilitate those shipments and decrease shipping times and shipping costs. Interstates also provide visibility to the public, an important factor for most companies, but a vital factor for automobile manufacturers. Previous GVC literature highlights that this is because the size and costs of their product spark backlash if they are not produced domestically.

Following the re-designation of Highway 78 as Interstate 22, the Blue Springs site was briefly considered as a possible site by Toyota in 2003.

Toyota actually came through later in 2003. The same site engineer that we interacted with later visited in 2003, and we put him in a helicopter and looked over the site we had identified ... He sat us down after that and spent the next hour explaining why our site was going to be cut. [That plant went to San Antonio, TX, but] I used that [conversation] as a template ... to say “Hey, we need to begin” - David Rumbarger

This visit legitimized the Blue Springs site as a potential contender for future automobile plants, and it provided local level economic developers with the groundwork for what sorts of work needed to be done in order to further improve the value of their site. In particular, site engineers from Toyota expressed the need for information regarding soil content, information regarding the topography of the site, an extensive history of the site, and whether there were any other ownership claims for oil or minerals.

Local economic developers soon found this information, and they began to develop the site in order to fit the needs of an automobile manufacturer.

We did all phase one for all 1500 acres of the site, and we found a couple phase two issues that we dealt with at that point in time too. We cleaned that up before Toyota ever came ... We had 12 acres of core engineer wetlands that we had already submitted a mitigation plan for. - David Rumbarger

I had actually flown to Texas and met with Norfolk Southern, which is [the rail operator on] the north side of that site, and gotten an over carry agreement. [The rail] was on the

north side of the interstate, so we also had to bring the railroad over the interstate to the site as well. - David Rumbarger

Local economic developers did many of the tasks that the state had facilitated for Nissan a few years prior. As the site became more developed, the value of the site increased in the eyes of companies because there was less uncertainty, less opportunity costs, and less direct costs that they would have to bear.

More importantly though, the local economic developers had begun to form a working relationship with an automobile firm. In 2004, Governor Hailey Barbour took office and prioritized bringing another automobile manufacturer to the state. Governor Barbour also began to directly form relationships with the leaders of automobile firms, and the connections that economic developers in Lee county had already made proved invaluable.

I think the key is that there was a community that started with a strategy and really had a relationship with the company... When Governor Barbour took office in 2004, one of his first objectives was to make sure that we had a relationship with Toyota, Kia, and other companies that might be having another car plant in North America... From a state perspective, there was no project, just trying to build relationships ... [because we formed those relationships] when [these firms announced] a project, Mississippi had an inside tracking to some information about what those projects would look like ... The good news is that, going back to 2003, David and team had really done their homework and put

together a site ...[so] that site became the Premier Site for the state in order to win the project. - Gray Swoope

Because of the work that had already occurred at the local level to prepare the site and the relationships that had been formed, the Blue Springs site was a top contender for Toyota's new automobile final assembly plant.

These relationships proved to be an extremely important factor for the Blue Springs site. Northeast Mississippi does not have any major cities with large population bases. As such, there were concerns about the ability to find an adequate supply of workers for both Toyota's facility and needed suppliers. To rectify these concerns, local economic developers relied upon their relationships with upper managements to show how workforce demands could be met

[Dennis Cueno] ended up coming in March of 2006, and we had some of our high powered business people [such as] Aubrey Patterson (Bancorp South Chairman), Mickey Holliman (Chairman of Furniture Brands International), David Cole (Itawamba Community College President) meet with him ... We spent some time at the Cooper Tire plant, spent some time at the Community College ... We had people go through schools. We had people go through HR. We had people go through sister plants around ... [So many things] just to give them an idea of the work ethic [ and the number of workers we could provide] - David Rumbarger



Through showing that the largely rural Northeast Mississippi region had prominent industries, a history of manufacturers in the region, and a local community college which could prepare its students to work at the Toyota plant and its suppliers, local economic developers put to rest the concerns surrounding the region's workforce capabilities.

However, this alone would not be enough to win Toyota's approval. Local level economic developers knew that Toyota and other automobile manufacturers were looking at other sites as well.

We qualified properly about 8 sites that they had looked at ... When you get to that level of complexity as far as utilities, power, land use, and access to interstates, these sites really come down to a narrow funnel. - David Rumbarger

Ultimately, the work of the local economic developers had managed to make the Blue Springs site comparable to other sites throughout the Southeast. Any additional progress toward bringing an automobile manufacturer to the site needed to be facilitated by state level officials. At that point, Governor Barbour himself got heavily involved in the process.

[After Governor Barbour heard we were the only site being considered in Mississippi,] he was all in. It just took Dennis Cueno saying "this is what my choice is" and then Governor Barbour, literally on a dime, turned around and said "OK, what do we do to win the project?". He became the best ally we could have ever had, working back and forth on so many issues. - David Rumbarger

Governor Barbour did play an active role. [He wanted] daily updates. He wanted to know where we were, what was the latest news, if he needed to do anything and so on ... In the week after Christmas, we got a request from Japan to put it all on the table in a proposal with the documents ... Governor Barbour did what he calls his “Matlock Moment” where we recorded him giving what was basically a closing argument for why they should come to Mississippi. - Gray Swoope

As the process neared the final stages, final negotiations were conducted almost exclusively by the Governor and his team. Toyota’s upper management met in Japan, and Toyota USA’s site selection consultants offered their site recommendations. On February 24th, Toyota alerted Governor Barbour that they had selected the Blue Springs site as the site for their new automobile final assembly plant. Then, on the 26th, Governor Barbour and his team briefed the legislative leadership of Mississippi House and Senate and told them his requests for incentives. The following day, Toyota USA publicly announced that they would be opening a plant in Blue Springs, MS, and the Mississippi legislature passed an incentive package.

The incentive package that passed mirrored the incentive package that Mississippi passed years earlier for Nissan’s plant in Canton, MS. This package included \$239.9 million, most of which would be directed toward site preparation and infrastructure. An important note is that the Governor also included a \$30 Million for top tier suppliers to locate in Mississippi as opposed to Alabama or Tennessee (Pettus 2007).

The initial estimates from the state of Mississippi were that Toyota would create 2000 jobs directly and 2000 additional jobs from suppliers when they opened their doors in 2010. This is largely what occurred for the region. Economic developers were able to work with other suppliers and use the \$30 million in supplier incentives to help those plants establish in Northeast Mississippi.

There were no suppliers there initially because Toyota used their family of suppliers ... If you look at the [45 minute radius], those suppliers could be locating in Tennessee or Alabama, so Governor Barbour added \$30 million to entice suppliers to locate in Mississippi close to the plant. - Gray Swoope

We located 10 suppliers [for Toyota]. Of those 10 suppliers, 8 located within the state of Mississippi... This model for Toyota was for a more rural environment where they decentralized their supplier network... and those plants ended up being in Pontotoc County, Itawamba County, Union County, and Lee County ... and that's why an automobile plant is so important is because it has such tentacles into the community - David Rumbarger

Through regional assistance by local economic developers and the \$30 million in incentives, 8 suppliers located in different counties around the Toyota plant. These plants created an additional jobs throughout Mississippi, the bulk of which occurred within the surrounding counties though others occurred further away alongside interstates. As hinted at by David Rumbarger in his quote

and by William Scaggs earlier in the chapter, this was the intended outcome of pursuing an automobile manufacturer.

Not only did Toyota and its suppliers add new jobs to a region that was losing jobs, these new jobs raised the average wage in the region, especially for manufacturing workers. According to Cayla Cardamone (2017) average wages in Union County, Pontotoc County, and Lee County were generally lower than the Mississippi average for all workers and manufacturing workers in specific. The most startlingly increases that occurred after Toyota's plant opening are for manufacturing workers. In 2009, the average manufacturing worker's salary was \$29,313 in Union County. This was well below the State average of \$39,568 in 2009. Immediately after the plant opened in 2010, Union County's average manufacturing salary increased by 21.58% to \$38,319. Nearby Pontotoc and Lee county's did not see as pronounced of an increase (4.43% and 0.23% respectively), primarily because they received suppliers who employed less workers and paid slightly less and they already had much higher averages. The impact of Toyota's wages are even more pronounced when you look further down the timeline to 2015. In 2015, Union County's average manufacturing worker's salary was \$49,890, a 30.2% increase from when the plant first opened.

## **Findings and Discussion**

Through coupling interviews with economic developers and recent quantitative research, it is quite obvious that automobile manufacturers have profound impacts on both the economic development of regions and on workers. This section will report and summarize the key findings from these interviews. Then, this section will briefly highlight the aforementioned effects on job creation and wages that are found by the empirical work of Cayla Cardamone (2017) and use

those findings to evaluate the effectiveness of pursuing and subsidizing these firms. Throughout this section, discussion surrounding the findings will revolve around the effect on the community, how these findings align with previous GVC literature, and how these findings expand upon GVC literature.

### **The Automobile Industry's role in Development Outcomes**

Previous GVC literature on the automobile industry highlights that the automobile industry can be brought to less developed areas, spark waves of economic development to follow, and stay within those areas for long periods of time. Interviews with economic developers confirm this to be true. The evidence that stems from interviews with Mississippi economic developers suggests that many of the findings of previous GVC literature can be found in Mississippi's case.

Pavlínek (2009) found that automobile manufacturers moved their final assembly plants to Central and Eastern European Countries for multiple reasons. Central and Eastern European countries are still relatively underdeveloped, low-wage economies that are integrated within a highly affluent political unit (the EU). Furthermore, Pavlínek found that Central and Eastern European countries's weak trade unions, flexible labor laws, and government incentives actively accommodated these automobile Transnational Corporations and provided an adequately skilled workforce at a low wage. As such, these countries provided an opportunity for automobile manufacturers to produce their labor intensive products at a much lower cost while still having access to the affluent markets of Western Europe.

Pavlínek's findings align with the reality in Mississippi. Local and State level economic developers in both cases understood that Mississippi's history of low wage, largely non-

unionized labor was an attractive feature to automobile manufacturers. This attraction is a byproduct of the nature of automobile manufacturing. Automobiles are large final products which must be shipped to final markets via rail no matter where they are produced. Because automobiles produced within the United States can be shipped anywhere in the United States without tariffs and customs, firms locate where the other costs of production are the lowest, making states with low wage, non-unionized labor like Mississippi a target. Additionally, Mississippi and other southern states were actively providing incentives to these firms, much like the Central and Eastern European countries that Pavlínek points out.

Gereffi et. al (2008) shows that these automobile manufacturers have profound effects on the automobile value chain by being regionally produced and driving the co-location of suppliers. Gereffi et. al (2008) shows that automobile production clusters form close to end markets for a few reasons. One reason is that these automobile production forms clusters largely due to operational reasons. Automobile production often utilizes Just-In-Time production. This need to have parts delivered just in time for production to begin means that suppliers need to be close to final assembly plant in order to make sure parts arrive in a timely fashion no matter the circumstances. Another reason that these clusters occur is due to the high complexity of automobile products. Automobiles require many different components, and components are often specific to vehicle models and platforms. As such, suppliers generally only supply one consumer and interaction with that consumer necessitates proximity

Evidence for Gereffi's claims is present in interviews with local and state economic developers in Mississippi. All three economic developers interviewed showed that downstream economic development occurred when they talked about the number of suppliers that built their

own factories because of Nissan and Toyota's investment. These interviewees also confirmed that both Nissan and Toyota use their own family of suppliers who make parts specifically for their models and platforms. In the Nissan-Canton case, some of these suppliers were adjacent to the facility in order to expedite delivery and increase communication. Furthermore, William Scaggs elaborated on how Just-In-Time production was able to drive supplier co-location. The Just-In-Time component necessitates suppliers be near the factory in order to quickly supply the factory, sometimes multiple times a day. Additionally, suppliers who may already exist and are further away face an economic decision to invest in the construction of a new facility closer to a final assembly plant based on costs and benefits. When a final assembly plant produces a certain threshold of units, suppliers make less money paying for shipping than they would make if they simply invested in a plant much closer to the facility. Evidence that this is the case occurred in 2013 when a new industrial park was opened for Nissan Suppliers after Nissan expanded production to commercial vehicles.

Finally, Gereffi et. al (2008) shows that these plants are likely to be produced near end markers and long lived before a move ever occurs. Gereffi finds that this static nature is because of two factors. First, automobile final assembly plants are large plants that require massive capital investment. These massive capital investment are required to even begin production. As such, the benefits of moving production elsewhere must be massive in order to justify abandoning a facility worth billions of dollars and constructing another facility worth billions. The second reason is that those cluster tend to be regionally produced due to political pressures. Gereffi et. al (2008) finds that the high costs and visibility of automobiles is capable of generating backlash among the general population if imported vehicles have too much of a

market share of the total vehicles purchased. Gereffi et. al (2008) gives the example of Japanese automakers in the 1980's. Japan had begun to rapidly export their vehicles across the globe, taking over a large share of the American market in the process. In response, the United States set voluntary limits to market-share expansion via exports - a move directly aimed at Japanese Automobile manufacturers. Japanese automakers then moved to regional production within the United States. These political pressures for lead firms to locate final assembly plants within the same region as their final markets also means that suppliers face those same pressures to be locate regionally and proximate to the final assembly plants.

Evidence that this is the case can be seen when discussing why automobile manufacturers want to locate along an interstate. Economic developers in the Toyota-Blue Springs case went through great efforts to designate Highway 78 as Interstate 22. This re-designation did little to change the actual conditions of the roads near the site; it remained a four-lane road divided by a median, and the speed limit was only marginally increased from 65 MPH to 70 MPH. As such, designating the road as an interstate did little to decrease transportation costs. However, this re-designation was important because it connected other highways and allowed for a more direct interstate between the major cities of Memphis, TN and Birmingham, AL. This more direct interstate facilitated more traffic between these two major cities, and made Toyota's investment in the region far more visible. In his interview, William Scaggs points out that automobile firms actively wanted this visibility because it advertised that they were making an investment in the community. That desire to advertise their investment shows that these firms are aware of their vulnerability to public backlash, and showing that they were invested in the community kept public support in their favor.



## **The Role of State and Local Actors**

In addition to aligning with previous GVC literature, this thesis provides a substantial contribution by outlining the role of State and Local level actors in influencing automotive value chains. State and local economic developers actively influenced the decision to locate final assembly plants in Mississippi by improving the value of sites through multiple avenues. Additionally, state and local level actors also directly interacted with key decision makers inside automobile firms in order to further meet the needs of these firms and incentivize their investment within the state.

In the Nissan-Canton example, state level economic developers actively increased the value of the Canton site by addressing specific needs of the automobile industry. The first need that was met was the need to transport final products via rail. Mississippi Development Authority facilitated negotiations between Canadian National and Kansas City Southern in order to secure trackage rights for a short section of Canadian National's rail from Canton, MS to Jackson, MS. These negotiations were between two railroad companies, but they were facilitated by economic developers within the Mississippi Development Authority. In doing so, economic developers were able to improve the value of the Canton site because it ensured that Nissan was able to ship their cars to final markets. The second need that was met was speed to market. State level officials expedited the permitting process for Nissan. A construction project as large as Nissan's final assembly plant in Canton requires extensive environmental permits, many of which could take up to six months. Governor Ronnie Musgrove directly communicated with his appointee for the head of the Mississippi Department of Environmental Quality and have all environmental permits expedited. Nissan was able to receive all necessary permits within three to 4 months.

This meant that Nissan was able to begin producing and selling vehicles sooner, enabling them to start profiting off of their investment sooner. Finally, the state actively mitigated other concerns that Nissan had through a stimulus package and insurance. Infrastructure was improved to handle the increased use caused by Nissan. The State provided funding for labor training, so Nissan would have an adequately trained labor force that could begin production when the doors opened. Insurance provided by the state mitigated the risk of potential damage done to the facility by shifting soil. Other Incentives directly reduced the costs of construction that Nissan faced. All of these other incentives and promises made Nissan favor the Canton site over comparable sites throughout the Southeast.

In the Toyota-Blue Springs case, similar value enhancing actions occurred, except these actions were carried out by local level economic developers. Local level economic developers had the Blue Springs site environmentally cleared to pass both phase one and phase two of environmental permits before an automobile manufacturer seriously considered moving to the site. Additionally, economic developers had already secured an over carry agreement as well as plans to connect the railroad to the plant. Once Toyota had confirmed that they would be establishing a plant in Blue Springs, MS, they received a stimulus package that was similar to the stimulus package that was passed when Nissan established their plant. All of these actions mirror the actions that were done by state officials at the Canton site, and they were done to make the Blue Springs site more valuable in the eyes of automobile manufacturers by removing uncertainties, direct costs, and opportunity costs.

More importantly though, we see the role that state and local actors play in interacting with automobile firms in the Toyota-Blue Springs case. Because local economic developers

formed relationships with decision makers within Toyota, they were actively able to showcase what their region could offer. Local economic developers were able to take officials in charge of site selection to local schools, local community college, and local manufacturers in order to show that Toyota could find an ample supply of skilled workers, even in a region that had no major population centers. Once the selection process had been narrowed down to the Blue Springs site and a few other sites throughout the southeast, the Governor of Mississippi himself got directly involved in the process. By the interviewees' accounts, Governor Barbour was able to actively open doors to facilitate the process and served to directly influence senior management of Toyota by meeting with them on several occasions and sending a video statement explaining why Mississippi was the best place for them to invest. The interviewee's stressed that the Governor's involvement was critical to the project as it ensured that anything that needed to be done became a top priority for the entire state and that his assistance served as assurance to Toyota that Mississippi would fully cooperate with them.

### **Benefit to Mississippi**

Automobile manufacturers appear to be quite beneficial to the communities they locate in. These automobile manufacturers directly employ 1000's of workers at wages that are generally much higher than other jobs when they initially open. These jobs then force other companies to compete for workers and raise their respective wages, raising wages across all sectors, especially manufacturing (Cardamone, 2017).

However, whether or not these automobile manufacturers are worth the resources that the state pours into them is not so certain. Mississippi directly spent \$363 million to attract Nissan and its suppliers to Canton, MS and \$293.9 million to attract Toyota and its suppliers to Blue

Springs, MS. Mississippi also now forgoes much of the tax revenues that they would receive from these manufacturers. Some estimates put these tax breaks as effectively representing an additional \$1 billion in subsidies for each firm (Good Jobs First 2013). These incentive packages imposed massive costs on the state of Mississippi, and continued tax breaks in the future may prolong this debt and increase the cost of each job.

On a theoretical level, these subsidies are only necessary to attract workers when the workers who move to these new firms become less productive. The economic intuition behind this is rather simple and can be explained by discussing the economic intuition behind hiring decisions and how subsidies interact with that decision.

In a competitive market, firms tend to employ workers whose Marginal Product of Labor (MPL) exceeds their Marginal Cost (MC or Wage). This happens because if adding an additional worker generates any quantity of benefits more than it costs to employ them, the firm generates more profit from that worker's employment. Since the MPL of workers generally diminishes as more workers are added, the firm hires employees until the MPL of an additional worker is equal to the wage of that worker (I.e. a worker's wage in a competitive labor market is related to their MPL).

If a firm that would make the worker more productive begins producing within the state, that worker can earn a higher wage there because their MPL would increase at that new firm. That worker would then likely move, begin to work for that firm, and earn a higher wage. As such, there is no need for subsidies if the new firm truly employs workers in more productive work. Thus, if subsidies that Mississippi provides to Nissan are really necessary, then these new jobs must actually be less productive.

Subsidizing less productive work has deleterious effects on society. Suppose that a worker initially had a MPL of \$10/hour at a manufacturing plant in Canton, MS in 2002. That worker would be providing \$10/hour worth of production to society, and that worker would be receiving \$10/hour in wage. If Nissan opens up shop in Canton, MS and that same worker would have a MPL of \$9.50/hour at Nissan, that worker would not switch jobs and work at Nissan (because their wage would be \$0.50/hour less). However, if Nissan receives a subsidy for 10% of labor costs, it could afford to pay that worker \$10.45/ hour ( $\$9.50/\text{hour for their MPL} + \$0.95 \text{ from the 10\% subsidy}$ ). Now, that worker would move to Nissan and receive \$0.45/hour more. However, society incurs a cost from subsidizing this move to less productive work. The subsidies itself is simply a transfer from tax payers to that worker, but society now receives \$0.50 less in production because of the move ( $\text{Original MPL } \$10.00/\text{hour} - \text{New MPL } \$9.50/\text{hour} = \$0.50/\text{hour loss}$ ).

This theoretical approach to subsidies highlights two distinct possibilities. One possibility is that the subsidies provided to Nissan and Toyota were necessary for them to locate their plants in Mississippi, and workers employed by these firms are now having their wages subsidized to do less productive work. The other possibility is that these workers are actually more productive at these new firms, and the subsidies are not needed. If the latter situation is true, then subsidies are only acting as wealth transfers from Mississippi's tax payers to Nissan (distributed to employees, executives, and shareholders). Either situation implies that subsidies result in a net harm for the state, and the state would be better off not subsidizing the firm.

Branching out from the basic theory of subsidies, we can begin to conduct a basic analysis of the incentive packages and subsidies that Nissan received in order to apply it to this

theory. As previously mentioned, from 2000-2002, Mississippi passed 2 stimulus bills that totaled \$363 million in incentives (roads, site preparation, job training, etc.) It's estimated that Nissan was also eligible for up to an additional \$1 billion in subsidies in Mississippi over 20 years. That means that the total price tag for Nissan coming to Mississippi can be viewed as \$1.3 Billion over 20 years. However, if it is possible to separate the initial incentive package (which provided funding for infrastructure improvements, employee training, and site preparation) from the subsidies which followed afterwards, then another potential price tag to consider is \$363 million.

In order to make sense of these two potential price tags, we need to consider the total number of jobs that were created from these industries moving to Mississippi. According to Cayla Cardamone (2017) it appears that the Nissan plant in Canton created 12,432 jobs total (through all downstream avenues). However, Peavy (2007) looks at the Nissan case and finds that only 4,062 were “created”, all the other jobs were simply transfers from one industry to another.

With that in mind, there are four potential scenarios: 1) incentives / 12,432 workers , 2) incentives / 4,062 workers, 3) incentives + subsidies / 12,432 workers, and 4) incentives + subsidies / 4,062 workers. The results of these scenarios are -

$$1) \$363,000,000 / 12,432 = \$29,108 \text{ per worker}$$

$$2) \$363,000,000 / 4,062 = \$89,364 \text{ per worker}$$

$$3) \$1,300,000,000 / 12,432 = \$104,568 \text{ per worker}$$

$$4) \$1,300,000,000 / 4,062 = \$320,039 \text{ per worker}$$

I believe \$29,108 per worker figure from Scenario 1 represents the best case scenario. Through this lens, Mississippi spent \$29,108 per worker to relocate some workers to a new industry and to create new jobs. This doesn't seem too costly, especially considering that workers who transferred likely saw a wage increase and that new jobs that were created saw a new job with a higher than average wage. However, if you view this incentive package as a subsidy, there is the question of why these incentives were needed if the workers were engaging in more productive work.

The inclusion of transfers calls the use of these funds into question because these transfers may not have really improved their wage by much. As such, the \$89,364 per worker figure from Scenario 2 likely is the best representation of how much we spent on these new jobs. This means MS spent \$89,364 per job that paid roughly \$34,552 in 2003 and \$56,587 in 2015 (Cardamone 2017). It would take 3 years of all 4,062 workers being employed at the average manufacturing workers salary before the benefit in wages equalled out to our investment, and even then we would be lagging behind in actual tax revenue.

If you view the initial \$363 million incentive packages passed by Mississippi in 2002 and 2003 as investments in infrastructure and human capital, a potential justification for these funds arises. The automotive industry may have a certain "lumpiness" to it where decisions to invest capital and hire workers can only be done in large increments (I.e. you either get a lump sum of automotive manufacturing jobs or none at all).

This justification of the incentive packages shows theoretical potential. The highly complex, just-in-time nature of automobile production may suggest that this is true. Automobile

final assembly plants require many workers to assemble the complex components of cars, and suppliers must be located nearby in order to meet time constraints. Unfortunately though, this study cannot speak to how that “lumpiness” affects the firm’s decision and whether the use of incentive packages serve to justify that use without subsidizing less productive work or acting as wealth transfers.

However, when you include the tax breaks and subsidies into the price tag for these jobs, it becomes clear that the state is engaging in societally harming behavior. Scenario 3 puts the price tag at \$104,568 per worker, and Scenario 4 puts the price tag at \$320,039 per worker. Even though these costs are spread out by 20 years, the result is that each job is being subsidized by \$5,228 a year in Scenario 3 and \$16,002 a year in Scenario 4. The economic intuition from subsidies clearly apply here, and the implication is that either these subsidies are needed and the state is effectively paying workers thousands a year to do less productive work or these subsidies are not needed and the state is transferring wealth from tax payers to Nissan. The latter explanation has been advocated in other empirical works on the Automotive industry in Mississippi, with those authors going so far as to call the practice of subsidizing Toyota and Nissan “Crony Capitalism” (Garrett and Shughart 2018).

In conclusion, from a strategy perspective, it seems clear that incentives were critical in the firm’s initial decision to locate to Mississippi. This is because large scale industrial sites are often highly comparable in the final stages of the selection process, and southern state effectively engaged in a bidding war. However, whether or not the final amount spent on each firm was justified is uncertain. Mississippi spent \$363 million alone on Nissan’s incentive packages. It is possible to view these incentive packages as infrastructure and human capital investments that



when coupled with the “lumpiness” of the automobile industry mean they are worthwhile investments. On the other hand, the value of giving additional tax breaks beyond the initial promise is clearly deleterious. Providing subsidies to Nissan and Toyota either subsidize workers’ wage to do less productive work (harming society in the process) or they simply act as wealth transfers from tax payers to Nissan and Toyota. Furthermore, the removal of tax breaks are unlikely to cause firms to move due to the extremely large capital investment that these final assembly plants are, and firms are unlikely to substantially decrease the number of workers they employ if tax breaks are removed.

## **Chapter 4: Conclusion and Implications for Future Development**

### **Introduction**

In this thesis, I set out to study Mississippi - a relatively underdeveloped region within one of the most developed countries in the world. Within Mississippi, one of the largest drivers of economic development in recent years has been two automobile final assembly plants. Using Global Value Chain theory, I investigated the automobile industry in Mississippi in order to determine how it drives economic development and how that can be replicated in the future for other industries.

### **Contribution**

Through interviews with economic developers at the State and Local level, I discovered that the automobile industry in Mississippi is capable of driving economic development due to its Just-In-Time, modular style of production. I also found that economic developers and policy makers heavily pursued these manufacturers for two additional reasons. First, areas like Mississippi were capable of providing an adequately skilled workforce at the lowest possible price (I.e. Mississippi had the comparative advantage in labor). Second, these plants tended to be static, due to both massive capital investments and political pressures. All of these findings align with previous GVC literature on the automobile industry.

This thesis contributes an in depth analysis of the role of state and local actors in influencing the location of these firms on a subnational level. Previous GVC literature generalizes the role of governments as providing subsidies or threatening restrictive policies. In reality, the role of State and local actors is far more complex. State and local actors act as in

improving the value of sites, advertising their unique benefits, and promising expedited solutions.

Both the Nissan-Canton and Toyota-Blue Springs cases show that local and state actors play a massive role in improving the value of sites. In both cases, economic developers took steps to ensure automobile manufacturers could access their markets through rails, could begin to ship products to market faster, and any risks about the location mitigated. In the Toyota-Blue Springs case, we also see the role of local economic developers acting as salesmen. Local economic developers actively showcased their area to prove that their site was a viable option despite many factors which had previously been big issues to automobile manufacturers. Finally, in both cases, we see the important role that governors and other state executives play in the process by promising expedited solutions. In the Nissan-Canton case, Governor Musgrove's appointees for the Mississippi Development Authority and the Mississippi Department of Environmental Quality expedited permits at the governor's orders. In the Toyota-Blue Springs case, Governor Barbour played an active role in contacting every major player and facilitating work.

### **Implications for Future Development**

The roles these local and state actors play have serious implications for how these actors can influence economic development in the future. These actors correctly identified elements that were important in the decision making process of these firms and they acted accordingly. These actors also targeted an entity that was especially capable of both remaining static and driving the co-location of suppliers near the firm. By taking note of the lessons these cases provide, policy

makers and government affiliated actors can further develop Mississippi and secure more valuable segments of global value chains within the state.

### **Upcoming Developments - Electric Vehicles**

One way that lessons learned from these cases can be utilized is by applying them to upcoming developments in the automobile industry. Recently, there has been a shift toward electric vehicle adoption within the United States. Industry giants such as Ford, Chevrolet, and more importantly, Nissan and Toyota have announced that their companies will be transitioning to electric vehicles. Many of these companies state that by 2030, most, if not all, of their fleet will be electric or electric capable (Toohey 2021, Eisenstein 2021). This marks a tremendous shift in the value chain as these lead firms will now demand new products from their suppliers, and these new suppliers are opportunities for economic developers.

Electric vehicles utilize electric motors and thus no longer need traditional gasoline powered engines. It is probable that engine factories owned and operated by Nissan and Toyota will simply transition to producing electric motors, but it is possible that there will be additional opportunities to establish electric motor suppliers within Mississippi.

A far more likely opportunity however is the additional, bulky materials that electric vehicles require. Electric vehicles currently require massive battery packs which span the length of the car's cabin. Electric vehicles also require power converters and coolant systems. The bulkiness and necessity of these components means that they are unlikely to be produced from far away and then shipped to the final assembly plant. As such, these are new firms (or new adaptations to suppliers) that Mississippi must facilitate if they want to reap the benefits of these changes to the value chain.

These benefits, whether they be from electric motor factories or other suppliers, can be obtained by following many of the previous actions that economic developers took for Nissan and Toyota. However, these actions must be catered for the specific needs of the electric components. Sites are still a large component of the decision to locate for suppliers. Much like the sites for Nissan and Toyota, sites that already have environmental permitting complete or can easily be expedited is a major advantage. However, these sites are less likely to require rail access in order to establish a plant. Incentives will also play a big role in influencing the location decision of these suppliers. Most importantly though, these new, tier one suppliers will also require tier two and tier three suppliers. Mississippi must facilitate access to those lower tiers if they hope to facilitate tier one suppliers. Our laws, strategies, and infrastructure need to be compatible with the demands of these new suppliers so we can ensure that they are able to operate within our state.

Outside of locating new suppliers in the state, we also have a tremendous opportunity to incorporate more valuable segments of the supply chain within Mississippi. Electric vehicles are a relatively new technology that could potentially incorporate other technologies such as AI powered autonomous driving systems. These new technologies will have to undergo testing. That testing will create more research and development jobs, and those jobs could be located with Nissan's and Toyota's final assembly plants in Mississippi. In order to secure this valuable segment of the value chain and bring those jobs to Mississippi, Mississippi will need to adapt its laws and regulations to facilitate this testing to occur within the state (I.e. electric charging infrastructure, policies allowing autonomous vehicles to be tested within the state, etc.).

## **Implications for Other Industries**

In addition to the new opportunities that arise from changes in the automobile industry, the lessons learned from the Nissan-Canton and Toyota-Blue Springs cases can be adapted and applied to new industries as well. These lessons can be which industries to target as well as how to support other industries and facilitate their growth.

Transaction cost economics, and to an extent GVC theory, theorize that industries will try to minimize costs over repeated transactions. In the automobile industry, this looks like Nissan and Toyota having close relationships with their suppliers and those suppliers locating near the factory. The close relationship with suppliers facilitates long term contracts which lower transaction costs related to negotiation, and the proximity of suppliers to a final assembly plant lowers the costs of repeated shipments.

These attributes of the automobile industry describe the theory behind Just-In-Time production and explain why the automobile industry was able to facilitate economic development. In the future, policy makers and government actors at all levels can target new industries with the same implications of transaction costs in mind. For example, manufacturers who utilize modular production and whose outsourced modules are quite large are likely to be equally as powerful drivers of economic development as the automobile industry. Additionally, industries which have repeated transactions with another firm/ industry may benefit from establishing in the same region.

Outside of trying to secure large manufacturers and their suppliers, Mississippi can also facilitate the growth of new firms that are not massive employers or drive suppliers. Local and state level actors correctly identified that land, access to rails, access to interstates, and access to

a sizable skilled labor pool were important to the automobile industry. Other firms within other sectors of the economy have different sets of needs. Given the growing success of firms that conduct business either partially or fully online, there is an opportunity to facilitate those firms constructing office buildings within Mississippi or having their workers live in Mississippi and work remotely. The transaction costs of these firms largely revolve around time and recruitment of labor. As such, these firms and their workers may not require interstate access or a sizable workforce, but they will require access to high speed internet and at least an adequate supply of skilled workers. In order to reap some rewards from this growing sector of the economy, the state should invest in infrastructure that facilitates these industries (ie. fiber optic access throughout business areas and residential areas to allow work from home) and educational opportunities that ensure these firms can access a workforce here.

## **Conclusion**

The global economy is becoming an increasingly complex and diversified space. Inside of it, there are numerous opportunities for how underdeveloped regions like Mississippi can spur economic development into the future. In this thesis, I have given an account of why Mississippi remained underdeveloped for so long, how we attempted to change it, and how the automobile industry has begun to drive economic development. I then analyzed this last element of the story through Global Value Chain theory and illuminated the role that state and local actors play in the process. Though the road ahead is uncertain, this analysis makes it clear that local and state actors can continue to bring development and prosperity to Mississippi through understanding and targeting the needs of firms, either through infrastructure, advertising, negotiations, or a combination of the three.

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